**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE: \_\_\_\_\_\_\_\_\_\_\_ PER. \_\_\_\_\_\_\_**

**Bio-Com - Chapter 14 - The Human Genome – Test – STUDY GUIDE**

1. How many chromosomes are shown in a normal human karyotype?

2. What can be observed in a karyotype?

3. In humans, a male has \_\_\_\_\_ chromosomes.

4. Human females produce egg cells that have \_\_\_\_ chromosomes.

5. What is the approximate probability that a human offspring will be female?

6. What percentage of human sperm cells carry an X chromosome?

7. A pedigree can be used to \_\_\_.

8. What disorder is caused by a dominant allele?

9. What trait is determined by multiple alleles?

10. A person who has PKU \_\_\_\_.

11. 44 of the 46 human chrosomomes are \_\_\_\_.

12. Sickle cell disease is caused by a \_\_\_\_\_.

13. In a pedigree, a circle represents a(n) \_\_\_\_.

14. Most sex-linked genes are located on \_\_\_\_.

15. Colorblindness is more common in males than in females because \_\_\_\_.

16. The failure of chromosomes to separate during meiosis is called \_\_\_\_.

17. What combination of sex chromosomes represents a female?

18. Nondisjunction can involve \_\_\_\_.

19. The Human Genome Project is an attempt to \_\_\_.

20. The purpose of gene therapy is to \_\_\_\_.

21. In a human karyotype, 44 of the chromosomes are \_\_\_\_.

22. In a human karyotype, \_\_\_\_\_ chromosome pairs are similar in size and shape.

23. In humans, the \_\_\_\_\_\_ determines the sex of the offspring.

24. A pedigree showing the inheritance of Huntington’s disease within a family \_\_\_\_\_\_ show shaded symbols for people with the disease.

25. If a person has blood type A, he or she \_\_\_\_\_ receive a blood transfusion from a person with blood type O.

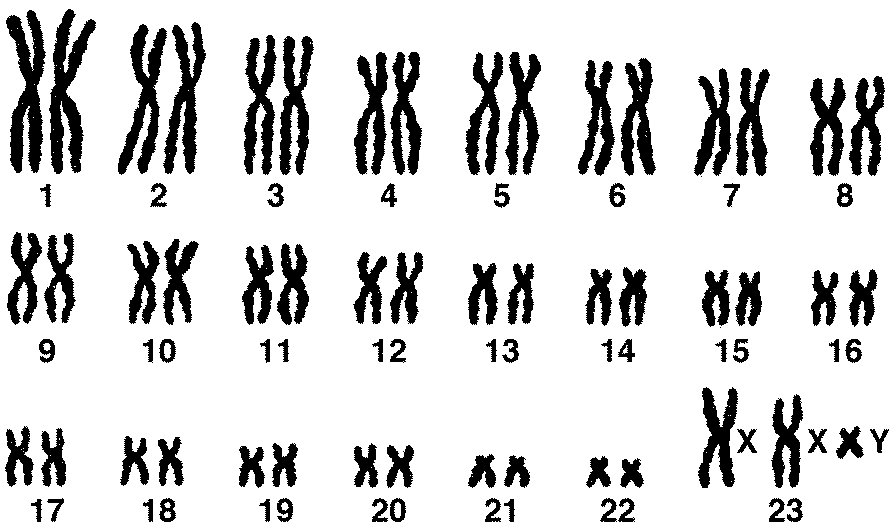
26. Two parents who have Huntington’s disease \_\_\_\_\_\_ produce an offspring who does not have Huntington’s disease.

27. An \_\_\_\_\_\_\_ trait would be common in males than in females.

28. A person who has Down syndrome has \_\_\_\_\_ copies of chromosome 21.

29. DNA fingerprinting analyzes sections of DNA that have little or no known function but are \_\_\_\_\_\_\_ from person to person.

30. Information from the Human Genome Project can be used to learn more about \_\_\_\_.

****

**Figure 14–1**

31. In the human karyotype in Figure 14–1, what are the chromosomes in each numbered group called?

32. In Figure 14–1, how are the chromosomes that make up each numbered pair similar?

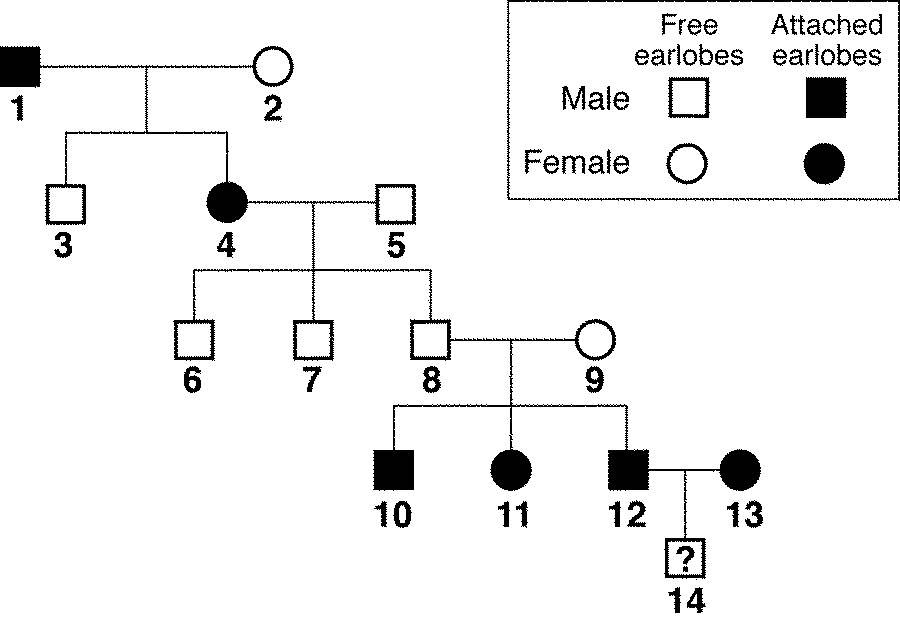
33. Which chromosomes in Figure 14–1 are autosomes?

34. In the human karyotype in Figure 14–1, how many chromosomes are shown?

35. In Figure 14–, does the karyotype show the normal number of sex chromosomes?

**Use the Pedigree Chart below to answer the questions**

The pedigree shows the inheritance of free earlobes and attached earlobes in five generations of a family. Attached earlobes are caused by a recessive allele *(f)*.

****

**Figure 14–2**

36. In Figure 14-2, what is individual 2’ genotype for free earlobes?

37. In Figure 14–2, how many children of individuals 4 and 5 have attached earlobes?

38. What is the possible genotype of individual 5 in Figure 14–2?

39. What is the genotype and phenotype of individual 14 in Figure 14–2.

40. In Figure 14–2, are any of the descendants of individuals 1 and 2 **homozygous** for free earlobes?